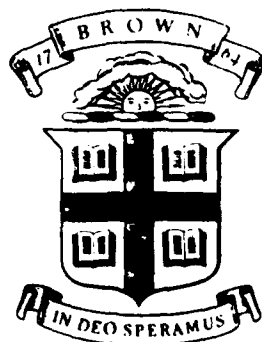
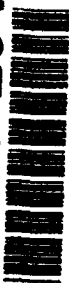


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## BROWN UNIVERSITY

### Program

First Workshop on  
Principles and Practice of  
Constraint Programming

April 28-30, 1993  
Newport, Rhode Island

Sponsored by ONR

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# First Workshop on Principles and Practice of Constraint Programming

April 28-30, 1993

Newport, Rhode Island

Sponsored by ONR

## Technical Program

The First Workshop on the Principles and Practice of Constraint Programming (April 28-30, 1993 in Newport, RI) is an inter-disciplinary meeting focusing on constraint programming as a general paradigm for computation. The workshop is sponsored by the Office of Naval Research (ONR). It is organized by Paris Kanellakis (Brown University), Jean-Louis Lassez (IBM Watson), Clifford Lau (ONR), Vijay Saraswat (Xerox PARC), Ralph Wachter (ONR), and Donald Wagner (ONR). Local arrangements were made by Pascal van Hentenryck (Brown University). The program committee is:

Alan Borning (Univ. of Washington, Seattle)	Jacques Cohen (Brandeis Univ.)
Johan de Kleer (Xerox PARC)	David Dill (Stanford Univ.)
Eugene Freuder (Univ. of New Hampshire)	John Hooker (CMU)
Joxan Jaffar (IBM Watson)	Paris Kanellakis (Brown Univ.)
Deepak Kapur (SUNY Albany)	Dexter Kozen (Cornell Univ.)
Jean-Louis Lassez (IBM Watson)	Jean-Claude Latombe (Stanford Univ.)
Nancy Lynch (MIT)	David McAllester (MIT)
Albert Meyer (MIT)	Anil Nerode (Cornell Univ.)
Fernando Pereira (AT&T Bell Labs)	Raghu Ramakrishnan (Univ. of Wisconsin)
Vijay Saraswat (Xerox PARC)	Pascal Van Hentenryck (Brown Univ.)

The meeting will be small and informal, providing forums for prepared presentations, panels and discussions. Participation is by invitation of the program committee and is restricted primarily to authors of contributed papers. Proceedings will be available at the workshop in technical report form.

**Workshop Organization:** The workshop includes invited talks (half an hour followed by equal question and discussion time) and sessions. Each session is organized around a theme. It has a list of panelists selected from the workshop attendees, a list of papers selected for short presentations in that session, and it is to be moderated by members of the program committee and workshop organizers. Each session also has time for open discussion by the moderators, panelists, and the audience.

The proceedings will contain copies of 37 position papers, which were selected from 94 submissions to the workshop. The selected position papers formed the basis for composing the list of invitees. A subset of these papers was selected for short (15 minute) presentations, whose purpose is to set the stage for the half-hour panel discussions in each session.

The design of each session is in the hands of its moderators, subject to the condition that each planned presentation is allotted 15 minutes. Each session should have at least half an hour free for

open discussion—moderators may want to ensure that at least all panelists for the session have an opportunity to speak for some time. To make each session successful, we ask that the moderators correspond with each other, and identify basic issues which can serve as the backbone for open-ended discussion. Moderators are ultimately responsible for the allocation of remaining time and for additional speakers in this time.

In the overall organization an attempt was made to devote most time to open but structured discussion. An attempt was also made to include as many researchers with an active interest in constraint programming as possible, while keeping the size and atmosphere of a workshop.

## **Tuesday April 27th**

8:00pm-10:00pm Welcoming Reception at Hotel

## **Wednesday April 28th**

8:30am-9:00am Breakfast

9:00am-10:00am Invited Talk by A. Colmerauer (30 min.)

**Moderator:** J.-L. Lassez

**Open Discussion (30 min.)**

10:00am-10:30am Coffee Break

10:30am-12:00pm Session on Constraints in Logic Programming

**Moderators:** Jaffar, Van Hentenryck, Pereira

**Panelists:** Benhamou, Johnson, Maher, McAloon, Michaylov, Older, Tretkoff, Warren

**Initial Presentations (15 min. each):**

*Higher-Order Logic Programming as Constraint Logic Programming*  
Spiro Michaylov, Frank Pfenning

*Programming in CLP(BNR)*  
William Older, Frédéric Benhamou

*Memoization in Constraint Logic Programming*  
Mark Johnson

*2lp: Linear Programming and Logic Programming*  
Ken McAloon, Carol Tretkoff

**Open Discussion (30 min.)**

12:00pm-1:30pm Lunch at hotel.

- 1:30pm-3:00pm      Session on Constraints and Concurrency  
**Moderators:** Dill, Lynch, Saraswat  
**Panelists:** Ait-Kaci, Haridi, Mackworth, Montanari, Rossi, Savor, Zhang  
**Initial Presentations (15 min. each):**  
*Constraint Satisfaction, Constraint Programming and Concurrency*  
Ugo Montanari, Francesca Rossi  
*Constraint Programming in Constraint Nets*  
Ying Zhang, Alan Mackworth  
*A Real Time Extension to Logic Programming Based on the Concurrent Constraint Logic Programming Paradigm*  
Tony Savor, Paul Dasiewicz  
*The Andorra Kernel Language (AKL): A General Purpose Concurrent Constraint Language*  
Sverker Janson, Seif Haridi, Johan Montelius, Torkel Franzén, Per Brand, Kent Boortz, Björn Danielsson  
**Open Discussion (30 min.)**
- 3:00pm-3:30pm      Coffee Break
- 3:30pm-5:00pm      Session on Programming with Constraints  
**Moderators:** Borning, Cohen, J.-L. Lassez  
**Panelists:** Bobrow, Keirouz, Kramer, Meyers, Reiss, Sannella, D. Smith, Zippel  
**Initial Presentations (15 min. each):**  
*Exploiting Dependency Information for Debugging and Explanation*  
Walid Keirouz, Glenn Kramer, Jahir Pabon  
*Constraining the Structure and Style of Object-Oriented Programs*  
Scott Meyers, Carolyn Duby, Steven Reiss  
*Synthesis of Constraint Algorithms*  
Douglas Smith  
*A Constraint Based Scientific Programming Language*  
Richard Zippel  
**Open Discussion (30 min.)**
- 5:00pm              Dinner (on your own)

**Thursday April 29th**

- 8:30am-9:00am      Breakfast

- 9:00am-10:00am    Invited Talk by H. Gallaire (30 min.)  
                    **Moderator:** Saraswat  
                    **Open Discussion (30 min.)**
- 10:00am-10:30am    Coffee Break
- 10:30am-11:45am    Session on Constraint Databases  
                    **Moderators:** Kanellakis, Ramakrishnan  
                    **Panelists:** Brodsky, Cruz, Kuper, C. Lassez, Naqvi, T. Smith  
                    **Initial Presentations (15 min. each):**  
                    *Separability of Polyhedra and a New Approach to Spatial Storage*  
                    Alexander Brodsky, Catherine Lassez  
                    *Aggregation in Constraint Databases*  
                    Gabriel Kuper  
                    *Using a Visual Constraint Language for Data Display Specification*  
                    Isabel Cruz  
                    **Open Discussion (30 min.)**
- 11:45am-1:00pm    Lunch at hotel
- 1:00pm-2:15pm    Session on Constraint Solving I  
                    **Moderators:** Kapur, Kozen, Meyer  
                    **Panelists:** Dubé, Fages, Imbert, H. Kirchner, Mantha, Yap  
                    **Initial Presentations (15 min. each):**  
                    *The Geometry in Constraint Logic Programs*  
                    Thomas Dubé, Chee-Keng Yap  
                    *Fourier's Elimination: Which to Choose?*  
                    Jean-Louis Imbert  
                    *Implementing Computational Logics with Constraints*  
                    Claude Kirchner, Hélène Kirchner, Marian Vittek  
                    **Open Discussion (30 min.)**
- 2:15pm-2:30pm    Coffee Break

- 2:30pm-4:00pm    Session on Constraint Solving II  
**Moderators:** de Kleer, Freuder, McAllester  
**Panelists:** Frühwirth, Hubbe, Jégou, Kasif, Menezes, Rounds  
**Initial Presentations (15 min. each):**  
*Domains Decomposition in Finite Constraint-Satisfaction Problems*  
Philippe Jégou  
*A Disjunctive Decomposition Schema for Constraint Satisfaction*  
Eugene Freuder, Paul Hubbe  
*Terminological Reasoning with Constraint Handling Rules*  
Thom Frühwirth, Philipp Hanschke  
*Local Consistency in Parallel Constraint-Satisfaction Networks*  
Simon Kasif, Arthur Delcher  
**Open Discussion (30 min.)**
- 4:00pm-6:00pm    Visit to "The Breakers" mansion and Newport tour
- 6:00pm-9:00pm    Banquet at the Eisenhower House

#### Friday April 30th

- 8:00am-8:30am    Breakfast
- 8:30am-9:30am    Invited Talk by A. Nerode (30 min.)  
**Moderator:** Kanellakis  
**Open Discussion (30 min.)**
- 9:30am-9:45am    Coffee Break
- 9:45am-11:15am    Session on Applications  
**Moderators:** Hooker, Latombe, Nerode  
**Panelists:** Donikian, Fernando, Gleicher, Major, Pai, Ward  
**Initial Presentations (15 min. each):**  
*Robot Programming and Constraints*  
Dinesh Pai  
*Constraint Satisfaction in Functional Programming*  
François Major, Marcel Turcotte, Guy Lapalme  
*Constraint Management in a Declarative Design Method for 3D Scene Sketch Modeling*  
Stéphane Donikian, Gérard Hégron  
*Practical Issues in Programming Constraints*  
Michael Gleicher  
**Open Discussion (30 min.)**

11:15am-11:30am Coffee Break

11:30am-12:00pm ONR Panel

**Moderators:** Lau, Wachter, Wagner

12:00pm END OF WORKSHOP.



Hassan Ait-Kaci  
Digital Equipment Corporation  
Paris Research Lab  
85, avenue Victor Hugo  
F-92563 Rueil-Malmaison Cedex  
FRANCE  
hak@prl.dec.com

Pedro Barahona  
Departamento de Informática  
Universidade Nova de Lisboa  
2825 Monte da Caparica  
PORTUGAL  
pb@fct.unl.pt

Frédéric Benhamou  
Groupe d'Intelligence Artificielle,  
Faculté des Sciences de Luminy  
163, avenue de Luminy, case 901  
F-13288 Marseille Cedex 9  
FRANCE  
benham@gia.univ-mrs.fr

Daniel Bobrow  
Xerox Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304  
bobrow@parc.xerox.com

Alan Borning  
Dept. of Computer Science and Engineering, FR-35  
University of Washington  
Seattle, WA 98195  
borning@cs.washington.edu

Alexander Brodsky  
IBM T.J. Watson Research Center  
P.O. Box 704  
Yorktown Heights, NY 10598  
alexbro@watson.ibm.com

Bjoern Carlson  
Xerox Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304  
bcarlson@parc.xerox.com

Vijay Chandru  
Computer Science Department  
Indian Institute of Science  
Bangalore 560-012  
INDIA  
chandru@chanakya.csa.iisc.ernet.in

Jacques Cohen  
Computer Science Department  
Brandeis University  
Waltham, MA 02254  
jc@cs.brandeis.edu

Alain Colmerauer  
Groupe d'Intelligence Artificielle,  
Faculté des Sciences de Luminy  
163, avenue de Luminy, case 901  
F-13288 Marseille Cedex 9  
FRANCE  
colmer@gia.univ-mrs.fr

Isabel Cruz  
Computer Science Department  
Box 1910  
Brown University  
Providence, RI 02912  
ifc@cs.brown.edu

Johan de Kleer  
Xerox Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304  
dekleer@parc.xerox.com

David Dill  
Computer Science Department  
Stanford University  
Stanford, CA 94305  
dill@cs.stanford.edu

Stéphane Donikian  
IRISA  
Campus Universitaire de Beaulieu  
F-35042 Rennes Cedex  
FRANCE  
donikian@irisa.fr

Thomas Dubé  
Courant Institute of Mathematical Sciences  
New York University  
251 Mercer Street  
New York, NY 10012  
dube@cs.nyu.edu

Francois Fages  
LCR Thomson and LIENS  
Ecole Normale Supérieure  
45, rue d'Ulm  
F-75005 Paris  
FRANCE  
fages@dma.ens.fr

Tim Fernando  
CWI  
P.O. Box 4079  
1009 AB Amsterdam  
THE NETHERLANDS  
fernando@cwi.nl

Eugene Freuder  
Computer Science Department  
University of New Hampshire  
Durham, NH 03824  
ecf@cs.unh.edu

Thom Fruehwirth  
ECRC  
Arabellastr. 17  
D-8000 Muenchen 81  
GERMANY  
thom@ecrc.de

Hervé Gallaire  
XES  
27, Avenue de la Baltique  
F-91945 Les Ulis Cedex  
FRANCE  
gallaire\_herve.xes@xf.xerox.com

Hong Gao  
Salomon Inc.  
745 Route 3  
Rutherford, NJ 07070  
jgao@swampting.shi.com

Michael Gleicher  
School of Computer Science  
Carnegie Mellon University  
Pittsburg, PA 15213-3890  
gleicher@cs.cmu.edu

Seif Haridi  
SICS  
Box 1263  
S-164 28 Kista  
SWEDEN  
seif@sics.se

John Hooker  
Graduate School of Industrial Administration  
Carnegie Mellon University  
Pittsburgh, PA 15213  
jh38@andrew.cmu.edu

Paul Hubbe  
Computer Science Department  
University of New Hampshire  
Durham, NH 03824  
pdh@cs.unh.edu

Jean-Louis Imbert  
Groupe d'Intelligence Artificielle,  
Faculté des Sciences de Luminy  
163, avenue de Luminy, case 901  
F-13288 Marseille Cedex 9  
FRANCE  
imbent@gia.univ-mrs.fr

Joxan Jaffar  
IBM T.J. Watson Research Center  
P.O. Box 704  
Yorktown Heights, NY 10598  
joxan@watson.ibm.com

Philippe Jégou  
Laboratoire d'Informatique  
Université de Provence  
3, place Victor Hugo  
F-13331 Marseille Cedex 3  
FRANCE  
jegou@gyptis.univ-mrs.fr

Mark Johnson  
Dept. of Cognitive and Linguistic Sciences  
Box 1978  
Brown University  
Providence, RI 02912  
mj@cs.brown.edu

Gabriel Kuper  
ECRC  
Arabellastr. 17  
D-8000 Muenchen 81  
GERMANY  
Gabriel.Kuper@ecrc.de

Paris Kanellakis  
Computer Science Department  
Box 1910  
Brown University  
Providence, RI 02912  
pck@cs.brown.edu

Catherine Lassez  
IBM T.J. Watson Research Center  
P.O. Box 704  
Yorktown Heights, NY 10598  
lassez@watson.ibm.com

Deepak Kapur  
Institute for Programming and Logics  
Computer Science Department LI67A  
SUNY at Albany  
Albany, NY 12222  
kapur@albanycs.albany.edu

Jean-Louis Lassez  
IBM T.J. Watson Research Center  
P.O. Box 704  
Yorktown Heights, NY 10598  
jll@watson.ibm.com

Simon Kasif  
Computer Science Department  
The Johns Hopkins University  
Baltimore, MD 21218  
kasif@cs.jhu.edu

Jean-Claude Latombe  
Computer Science Department  
Stanford University  
Stanford, CA 94305  
latombe@cs.stanford.edu

Walid Keirouz  
Schlumberger Laboratory for Computer Science  
8311 North RR 620  
P.O. Box 200015  
Austin, TX 78720-0015  
walid@slcs.slb.com

Clifford Lau  
Office of Naval Research  
Code 1133  
800 North Quincy St.  
Arlington, VA 22217-5000  
clau@isi.edu

Hélène Kirchner  
INRIA Lorraine & CRIN  
BP 239  
F-54506 Vandoeuvre-les-Nancy Cedex  
FRANCE  
Helene.Kirchner@loria.fr

Nancy Lynch  
Laboratory for Computer Science  
Massachusetts Institute of Technology  
545 Technology Square  
Cambridge, MA 02135  
lynch@theory.lcs.mit.edu

Dexter Kozen  
Computer Science Department  
Cornell University  
Ithaca, NY 14853  
kozen@cs.cornell.edu

Alan Mackworth  
Computer Science Department  
University of British Columbia  
Vancouver, B.C.  
CANADA V6T 1Z2  
mackworth@cs.ubc.ca

Michael Maher  
IBM T.J. Watson Research Center  
P.O. Box 704  
Yorktown Heights, NY 10598  
mjm@watson.ibm.com

Francois Major  
National Center for Biotechnology Information  
National Library of Medicine  
National Institute of Health  
8600 Rockville Pike  
Bethesda, MD 20894  
major@ncbi.nlm.nih.gov

Surya Mantha  
Systems Sciences Laboratory  
Xerox Corporation  
Webster Research Center, 128-029E  
800 Phillips Road  
Webster, NY 14580  
mantha@wrc.xerox.com

David McAllester  
AI Laboratory  
Massachusetts Institute of Technology  
545 Technology Square  
Cambridge, MA 02135  
dam@ai.mit.edu

Ken McAloon  
Logic-Based Systems Lab  
Brooklyn College  
City University of New York  
2900 Bedford Avenue  
Brooklyn, NY 11210-2889  
mcaloon@sci.brooklyn.cuny.edu

Francisco Menezes  
Departamento de Informática  
Universidade Nova de Lisboa  
2825 Monte da Caparica  
PORTUGAL  
fm@fct.unl.pt

Albert Meyer  
Laboratory for Computer Science  
Massachusetts Institute of Technology  
545 Technology Square NE43-315  
Cambridge, MA 02135  
meyer@theory.lcs.mit.edu

Scon Meyers  
Computer Science Department  
Box 1910  
Brown University  
Providence, RI 02912  
sdm@cs.brown.edu

Spiro Michaylow  
Dept. of Computer and Information Science  
The Ohio State University  
228 Bolz Hall  
2036 Neil Avenue Mall  
Columbus, OH 43210-1277  
spiro@cis.ohio-state.edu

Ugo Montanari  
Computer Science Department  
University of Pisa  
Corso Italia 40  
I-56100 Pisa  
ITALY  
ugo@di.unipi.it

Shamim Naqvi  
Bellcore  
445 South Street  
Morristown, NJ 07962  
naqvi@bellcore.com

Anil Nerode  
Dept. of Mathematics  
Cornell University  
Ithaca, NY 14853-7901  
anil@math.cornell.edu

William Older  
Computing Research Laboratory  
Bell Northern Research  
P.O. Box 3511, Station C  
Ottawa, Ontario  
CANADA K1Y 4H7

Dinesh Pai  
Computer Science Department  
University of British Columbia  
Vancouver, B.C.  
CANADA  
pai@cs.ubc.ca

**Keith Park**  
Computer Science Department  
University of California  
Santa Barbara, CA 93106  
bahk@cs.ucsb.edu

Vijay Saraswat  
Xerox Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304  
saraswat@parc.xerox.com

**Fernando Pereira**  
AT&T Bell Laboratories  
600 Mountain Avenue  
Murray Hill, NJ 07974-2070  
pereira@research.att.com

Tony Savor  
Dept. of Electrical and Computer Engineering  
University of Waterloo  
Waterloo, Ontario  
CANADA N2L 3G1  
tsavor@vlsi.uwaterloo.ca

**Raghu Ramakrishnan**  
Computer Science Department  
University of Wisconsin-Madison  
1210 West Dayton Street  
Madison, Wisconsin 53706  
raghu@cs.wisc.edu

Douglas Smith  
Kestrel Institute  
3260 Hillview Avenue  
Palo Alto, CA 94304  
smith@kestrel.edu

**Steven Reiss**  
Computer Science Department  
Box 1910  
Brown University  
Providence, RI 02912  
spr@cs.brown.edu

Terence Smith  
Computer Science Department  
University of California  
Santa Barbara, CA 93106  
smithtr@cs.ucsb.edu

**Francesca Rossi**  
Computer Science Department  
University of Pisa  
Corso Italia 40  
I-56100 Pisa  
ITALY  
rossi@di.unipi.it

Divesh Srivastava  
Computer Science Department  
University of Wisconsin-Madison  
1210 West Dayton Street  
Madison, Wisconsin 53706  
divesh@cs.wisc.edu

**William Rounds**  
Artificial Intelligence Laboratory  
University of Michigan  
Ann Arbor, MI 48109  
rounds@engin.umich.edu

V. S. Subrahmanian  
Computer Science Department  
University of Maryland  
College Park, MD 20742  
vs@cs.umd.edu

**Michael Sannella**  
Dept. of Computer Science and Engineering, FR-35  
University of Washington  
Seattle, WA 98195  
sannella@cs.washington.edu

Carol Tretkoff  
Logic-Based Systems Lab  
Brooklyn College  
City University of New York  
2900 Bedford Avenue  
Brooklyn, NY 11210-2889  
tretkoff@sci.brooklyn.cuny.edu

Pascal Van Hentenryck  
Computer Science Department  
Box 1910  
Brown University  
Providence, RI 02912  
pvh@cs.brown.edu

Richard Zippel  
Computer Science Department  
Cornell University  
Ithaca, NY 14853  
rz@cs.cornell.edu

Ralph Wachter  
Office of Naval Research  
Code 1133  
800 North Quincy St.  
Arlington, VA 22217-5000  
wachter@itd.nrl.navy.mil

Donald Wagner  
Office of Naval Research  
Code 1133  
800 North Quincy St.  
Arlington, VA 22217-5000  
dwagner@ocnr-hq.navy.mil

Allen Ward  
Department of Mechanical Engineering  
University of Michigan  
2250 GG Brown  
Ann Arbor, MI 48109-2125  
alward@um.cc.umich.edu

David Warren  
Computer Science Department  
SUNY at Stony Brook  
Stony Brook, NY 11794-4400  
warren@cs.sunysb.edu

Chee-Keng Yap  
Courant Institute of Mathematical Sciences  
New York University  
251 Mercer Street  
New York, NY 10012  
yap@cs.nyu.edu

Ying Zhang  
Computer Science Department  
University of British Columbia  
Vancouver, B.C.  
CANADA V6T 1Z2  
zhang@cs.ubc.ca